

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An apparatus for endovascular therapy by occluding a physical anomaly, said anomaly having an interior, comprising:
a shape memory material body for positioning in the interior of the physical anomaly, wherein said shape memory material body comprises a shape memory polymer foam;

a delivery system for delivering said shape memory material body that comprises a shape memory polymer foam into the interior of the physical anomaly; and

a system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape for occluding the physical anomaly and a secondary shape for being ~~positioned in~~ delivered into the interior of the physical anomaly.

2. (Currently Amended) The apparatus of claim 1 wherein said ~~shape memory material body comprises a shape memory polymer foam~~ is a shape memory polymer foam with an open cell foam structure that has pores and wherein said pores have a mean pore size between ten microns and fifty microns.

3. (Currently Amended) The apparatus of claim 1 wherein said ~~shape memory material body comprises a shape memory polymer foam~~ is a shape memory polymer foam with an open cell foam structure that has an expansion ratio in the range of 200 percent to 20000 percent.

4. (Currently Amended) The apparatus of claim 1 wherein said ~~shape memory material body is biodegradable foam~~ is a shape memory polymer foam composed of a polyurethane shape memory polymer with an open cell foam structure.

5. (Currently Amended) The apparatus of claim 1 ~~including a delivery catheter~~ wherein said shape memory polymer foam is a shape memory foam with an open cell foam structure that is composed of a polyurethane shape memory polymer having a ten percent solution of shape memory polymer in dimethyl sulfoxide.

6. (Currently Amended) The apparatus of claim 1 ~~including a delivery catheter and a guide wire~~ wherein said shape memory polymer foam is a shape memory polymer foam with an open cell foam structure including a light absorbing dye.

7. (Currently Amended) The apparatus of claim 1 ~~including~~ wherein said delivery system for delivering said shape memory material body that comprises a shape memory polymer foam into the interior of the physical anomaly includes a delivery catheter, a guide wire having an end, and an expandable shape memory material at said end of said guide wire wherein said shape memory material body that comprises a shape memory polymer foam is at said end of said guide wire.

8. (Currently Amended) The apparatus of claim 1 wherein ~~said shape memory material body is a shape memory polymer foam and~~ said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises radiology.

9. (Currently Amended) The apparatus of claim 1 wherein ~~said shape memory material body is a shape memory polymer foam and~~ said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises electromagnetic energy.

10. (Currently Amended) The apparatus of claim 1 wherein ~~said shape memory material body is a shape memory polymer foam and~~ said system for

providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises electromagnetic energy delivered optically.

11. (Currently Amended) The apparatus of claim 1 wherein said shape memory material body that comprises a shape memory polymer foam is a collapsed shape memory polymer foam device connected at the end of a guide wire.

12. (Currently Amended) The apparatus of claim 1 wherein said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a system for optical heating using optic fibers to transport light energy to said shape memory material body that comprises a shape memory polymer foam.

13. (Currently Amended) The apparatus of claim 1 wherein said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a laser and an optical fiber wherein said laser transmits laser light through said optical fiber.

14. (Currently Amended) The apparatus of claim 1 wherein said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a laser and an optical fiber wherein said laser transmits laser light through a multimode optical fiber.

15. (Currently Amended) The apparatus of claim 1 wherein said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a light absorbing material.

16. (Currently Amended) The apparatus of claim 1 wherein said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a light absorbing dye in an elastomeric coating on said shape memory material body that comprises a shape memory polymer foam.

17. (Currently Amended) The apparatus of claim 1 wherein said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises microparticles that convert RF radiation to heat.

18. (Currently Amended) The apparatus of claim 1 wherein said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises microparticles of a material which can selectively absorb RF radiation converting it to heat.

19. (Currently Amended) The apparatus of claim 1 wherein said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises nanoparticles that convert RF radiation to heat.

20. (Currently Amended) The apparatus of claim 1 wherein said system for providing said shape memory material body that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises nanoparticles of a material which can selectively absorb RF radiation converting it to heat.

21. (Currently Amended) The apparatus of claim 1 wherein said shape memory material body that comprises a shape memory polymer foam comprises a shape memory polymer body that comprises a shape memory polymer foam

with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly.

22. (Currently Amended) The apparatus of claim 1 wherein said shape memory material body that comprises a shape memory polymer foam comprises a shape memory polymer foam body having a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly.

23. (Currently Amended) An apparatus for endovascular therapy by occluding a ~~physical anomaly~~, said anomaly an aneurism having an interior, comprising:

shape memory polymer material body ~~means~~ for being positioned in the interior of the ~~physical anomaly~~ aneurism, wherein said shape memory polymer material body comprises a shape memory polymer foam;

a delivery system for delivering said shape memory polymer material body that comprises a shape memory polymer foam into the interior of the aneurism; and

an activation means system for providing said shape memory polymer material body ~~means~~ with a primary shape for occluding the ~~physical anomaly~~ aneurism and a secondary shape for being positioned in the interior of the ~~physical anomaly~~ aneurism.

24. (Currently Amended) The apparatus of claim 23 wherein said shape memory polymer material body ~~means~~ that comprises a shape memory polymer foam is a shape memory polymer foam with an open cell foam structure that has pores and wherein said pores have a mean pore size between ten microns and fifty microns.

25. (Currently Amended) The apparatus of claim 23 wherein said shape memory polymer material body ~~means~~ that comprises a shape memory polymer

foam is a shape memory polymer foam with an open cell foam structure that has an expansion ratio in the range of 200 percent to 20000 percent.

26. (Currently Amended) The apparatus of claim 23 wherein said shape memory polymer material body means that comprises a shape memory polymer foam is biodegradable a shape memory polymer foam with an open cell foam structure including a light absorbing dye.

27. (Currently Amended) The apparatus of claim 23 including wherein said delivery system for delivering said shape memory polymer material body that comprises a shape memory polymer foam into the interior of the aneurism includes a delivery catheter.

28. (Currently Amended) The apparatus of claim 23 including wherein said delivery system for delivering said shape memory polymer material body that comprises a shape memory polymer foam into the interior of the aneurism includes a delivery catheter and a guide wire.

29. (Currently Amended) The apparatus of claim 23 including wherein said delivery system for delivering said shape memory polymer material body that comprises a shape memory polymer foam into the interior of the aneurism includes a delivery catheter, a guide wire having an end, and an expandable shape memory material wherein said shape memory material body that comprises a shape memory polymer foam is at said end of said guide wire.

30. (Currently Amended) The apparatus of claim 23 wherein ~~said shape memory material body means is a shape memory polymer foam and~~ said activation ~~means~~ system for providing said shape memory material body means with a primary shape and a secondary shape comprises radiology.

31. (Currently Amended) The apparatus of claim 23 wherein ~~said shape memory material body means is a shape memory polymer foam and~~ said activation ~~means~~ system for providing said shape memory material polymer

body means with a primary shape and a secondary shape comprises electromagnetic energy.

32. (Currently Amended) The apparatus of claim 23 wherein ~~said shape memory material body means~~ is a shape memory polymer foam and said activation ~~means~~ system for providing said shape memory material body means with a primary shape and a secondary shape comprises electromagnetic energy delivered optically.

33. (Currently Amended) The apparatus of claim 23 wherein said shape memory polymer material body ~~means~~ that comprises a shape memory polymer foam is a collapsed shape memory polymer foam device connected at the end of a guide wire.

34. (Currently Amended) The apparatus of claim 23 wherein said activation ~~means~~ system for providing said shape memory polymer material body ~~means~~ that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a system for optical heating using optic fibers to transport light energy to said shape memory material body ~~means~~ that comprises a shape memory polymer foam.

35. (Currently Amended) The apparatus of claim 23 wherein said activation ~~means~~ system for providing said shape memory polymer material body ~~means~~ that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a laser and an optical fiber wherein said laser transmits laser light through said optical fiber.

36. (Currently Amended) The apparatus of claim 23 wherein said activation ~~means~~ system for providing said shape memory polymer material body ~~means~~ that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a laser and an optical fiber wherein said laser transmits laser light through a multimode optical fiber.

37. (Currently Amended) The apparatus of claim 23 wherein said activation ~~means~~ system for providing said shape polymer memory material body ~~means~~ that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a light absorbing material.

38. (Currently Amended) The apparatus of claim 23 wherein said activation ~~means~~ system for providing said shape memory polymer material body ~~means~~ that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises a light absorbing dye in an elastomeric coating on said shape memory material body ~~means~~ that comprises a shape memory polymer foam.

39. (Currently Amended) The apparatus of claim 23 wherein said activation ~~means~~ system for providing said shape memory polymer material body ~~means~~ that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises microparticles that convert RF radiation to heat.

40. (Currently Amended) The apparatus of claim 23 wherein said activation ~~means~~ system for providing said shape memory polymer material body ~~means~~ that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises microparticles of a material which can selectively absorb RF radiation converting it to heat.

41. (Currently Amended) The apparatus of claim 23 wherein said activation ~~means~~ system for providing said shape memory material body ~~means~~ that comprises a shape memory polymer foam with a primary shape and a secondary shape comprises nanoparticles that convert RF radiation to heat.

42. (Currently Amended) The apparatus of claim 23 wherein said activation ~~means~~ system for providing said shape memory material body ~~means~~ that comprises a shape memory polymer foam with a primary shape and a

secondary shape comprises nanoparticles of a material which can selectively absorb RF radiation converting it to heat.

43. (Currently Amended) The apparatus of claim 23 wherein said shape memory material body ~~means~~ that comprises a shape memory polymer foam comprises a shape memory polymer body with a secondary shape for being positioned in the interior of the ~~physical anomaly~~ aneurism and a larger primary shape for occluding the ~~anomaly~~ aneurism.

44. (Currently Amended) The apparatus of claim 23 wherein said shape memory material body ~~means~~ that comprises a shape memory polymer foam comprises a shape memory polymer foam body having a secondary shape for being positioned in the interior of the ~~physical anomaly~~ aneurism and a larger primary shape for occluding the ~~anomaly~~ aneurism.

45. (Currently Amended) ~~A~~ An endovascular therapy method for occluding a physical anomaly, the physical anomaly having an interior, comprising the steps of:

providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly,

positioning said shape memory polymer material body comprising a shape memory polymer foam in the interior of the physical anomaly when said shape memory polymer material body is in said secondary shape, and

causing said ~~closure~~ shape memory polymer material body comprising a shape memory polymer foam to change to said larger primary shape for occluding the anomaly.

46. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory

polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly comprises providing a shape memory polymer foam body with an open cell foam structure that has pores and wherein said pores have a mean pore size between ten microns and fifty microns with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly.

47. (Currently Amended) The method of claim 45 wherein said step of positioning said shape memory polymer material body comprising a shape memory polymer foam in the interior of the physical anomaly when said shape memory polymer material body comprising a shape memory polymer foam is in said secondary shape is accomplished using a catheter.

48. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly comprises delivering electromagnetic energy optically to said shape memory polymer material body comprising a shape memory polymer foam.

49. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly comprises using a collapsed shape memory polymer foam device connected at the end of a guide wire.

50. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the

physical anomaly and a larger primary shape for occluding the anomaly comprises optical heating said shape memory polymer material body comprising a shape memory polymer foam.

51. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly comprises optical heating said shape memory polymer material body comprising a shape memory polymer foam through optic fibers.

52. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly comprises using a laser and an optical fiber to transmit laser light through said optical fiber.

53. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly comprises using microparticles that convert RF radiation to heat.

54. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly comprises using microparticles of a material which can selectively absorb RF radiation converting it to heat.

55. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly comprises using nanoparticles that convert RF radiation to heat.

56. (Currently Amended) The method of claim 45 wherein said step of providing a shape memory polymer material body comprising a shape memory polymer foam with a secondary shape for being positioned in the interior of the physical anomaly and a larger primary shape for occluding the anomaly comprises using nanoparticles of a material which can selectively absorb RF radiation converting it to heat.